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Government has consented to the wire being brought up to the Observatory, on the strong representation of the importance of the measure by the Board of Visitors of the Royal Observatory, under the presidency of the Right Hon. Lord Rutherfurd, who, we may add, had long since evinced the warmest interest in the subject of the time-ball, and, as Lord Advocate, three years ago, was the important turning point of the whole scheme.

Nearly every contingency seems thus to have been prepared for, except, perhaps, the conveniency of the method of hauling up the ball, as influenced by the peculiarities of the site—viz. the apparatus being on the top of a lofty building, and at a distance from the Observatory.

With reference to this object, it may be remarked, that, some trouble might be experienced in ensuring a porter's daily attendance throughout the year with perfect punctuality, unless recourse is again had to modern science. In accordance with this, a plan has been proposed, by which a weight having been wound up at *any previous hour of the day or night*, then on electrical contact being made at the Observatory by the astronomer at a precise moment, that weight is unlocked, immediately descends, and hauls up the the ball. Next at five, or any other number of minutes, a second contact being made on another wire lets the ball down.

Thus the ball is both raised up and let down by delicate signals given from the interior of the Observatory by the astronomer himself with equal punctuality, both operations being similarly independent of any external person at the time. Hence arises a result not unfrequent when human labour previously employed in the mere brute purposes of raising weights or turning wheels is replaced by scientific machinery, that the work is not only cheaper but better done than before. For the ball may in this way be raised so quickly and certainly, that the beginning of its rise becomes as good a time-signal as the commencement of its fall. There may thus be two signals daily; two also which can never be mistaken for each other, as two successive descents might often be.

Report of the Syndicate appointed to Visit the Observatory of Cambridge.

In this Report an account is given of the labours of Professor Challis at the Observatory of Cambridge during the year 1852, and also from the commencement of the present year down to the 20th of May.

The first part of the Report relates to the observations made in the year 1852. The transit observations made during the course of the whole year amounted to 2050, and the circle observations to 1543. Of these, 362 transits and 340 circle observations relate to bodies of the solar system. The remaining observations of stars were made for the most part in pursuance of Prof. Challis's plan of forming gradually a catalogue of zodiacal stars situated within 5° of the ecliptic, to the ninth magnitude inclusive.

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Observations of seventeen of the newly-discovered planets and of three comets (Biela's, Encke's, and Westphal's) were made in the course of the year with the Northumberland equatoreal. The comparisons in right ascension amount to 682, and those in north polar distance to 678. Eight occultations of fixed stars by the moon were observed.

At the beginning of the present year Professor Challis was induced to modify the system of meridian observation hitherto pursued by him, having found it to be no longer practicable to observe on the meridian with sufficient attention the large and constantly increasing number of newly-discovered small planets. The observations with the meridian instruments are now confined to those of the sun and moon, while the newly-discovered planets and comets are observed exclusively with the Northumberland equatoreal; the former more especially, in those positions wherein it is impossible to observe them on the meridian with the transit circle of the Greenwich Observatory.

The transit observations taken from the beginning of the current year to May 20 were 795, and the circle observations 553. In the same interval the Northumberland equatoreal was employed in observations of *Calliope*, *Lutetia*, *Thalia*, *Hygeia*, *Parthenope*, Secchi's Comet, *Iris*, and *Victoria*, the comparisons of these bodies with stars in right ascension amounting to 298, and those in north polar distance to 296. Twelve occultations of stars by the moon have also been observed.

Professor Challis has applied Mr. Pritchard's invention for getting rid of the oscillations at the surface of mercury, which occasion so much trouble to astronomers in observations by reflexion. The tremor is found to be much less than in a wooden trough. Further trial, however, is necessary before the new trough can be pronounced to answer the intended purpose in all respects.

The Report concludes with an allusion to the operations for determining the longitude of the Observatory of Cambridge by means of galvanic signals.

Tables of the Moon, &c. arranged in a form designed by Professor Benjamin Peirce, under the superintendence of Charles Henry Davis, Lieut. U.S.N., and published under the authority of the Hon. John P. Kennedy, Secretary of the Navy. Washington, 1853.

A review of the Lunar Tables constructed in successive ages presents an interesting picture of the progress of astronomers in unfolding the complicated irregularities of the moon's motion. It is a remarkable fact that the most considerable inequalities in the longitude of this body due to perturbation were satisfactorily established, not only previous to the discovery of the theory of gravitation, but even before any conception had been formed of the elliptical movements of the various bodies of the planetary system. It was by the aid of the much-decried theory of epicycles that astronomers were enabled to arrive at these important results.

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